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Fact Sheet for the Chairman and the Ranking Minority Member, Subcommittee on Oversight of Government Management, Committee on Governmental Affairs, United States Senate

July 1986

# STRATEGIC DEFENSE INITIATIVE PROGRAM

## Information on Contracting and Other Activities

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National Security and
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July 16, 1986

The Honorable William S. Cohen, Chairman
The Honorable Carl Levin, Ranking Minority
Member
Subcommittee on Oversight of
Government Management
Committee on Governmental Affairs
United States Senate

In your January 8, 1986, letter, you asked us to study the competitiveness and general procurement practices of Strategic Defense Initiative Organization (SDIO) research projects. As requested, we briefed your office on the status of our work on April 14, 1986. As agreed during the briefing, this fact sheet provides information on SDIO's

--contract reporting system,

--Innovative Science and Technology Office,

--foreign contracting, and

--planned Strategic Defense Initiative Institute.

We obtained this information from January to May 1986 as part of an overall review which will examine in more detail the procurement procedures and practices for SDIO-funded research projects at selected contracting activities. The results of our work are summarized below and described in more detail in the appendix.

## CONTRACT REPORTING SYSTEM

In September 1985, SDIO implemented a contract management information system to provide it with essential contract data on the fiscal year 1985 program and subsequent fiscal year programs. This system, which is undergoing refinement and update, did not contain complete information on all contractual obligations at the time of our review. Contract data on all contracts had not yet been reported and some contract data reported did not contain enough information to categorize them.

According to SDIO, subsequent updates to the system should eventually result in complete contract information on the fiscal year 1985 program. However, the procurement statistics contained in this fact sheet reflect only the available information on contracts being reported as of March 1986.

## INNOVATIVE SCIENCE AND TECHNOLOGY OFFICE

SDIO established the Innovative Science and Technology Office to seek out new and innovative approaches to ballistic missile defense, allocate funds to sponsor research in these approaches, and insure that the other technical divisions within SDIO are apprised of new results or breakthroughs. The Office is also responsible for (1) administering the SDIO Small Business Innovation Research program which is required by statute for the purpose of strengthening the role of small innovative firms in federally funded research and development programs, and (2) carrying out SDIO's administrative and technical responsibilities under the fiscal year 1986 Department of Defense (DOD) Authorization Act for the medical application of free-electron lasers and associated material and physical science research. Information provided by SDIO indicates that the Office's total program funding was $28 million for fiscal year 1985 and will increase to $111 million for fiscal year 1986.

## FOREIGN CONTRACTING

SDIO and its executing organization officials stated that there has not been any significant contracting with foreign firms or governments on Strategic Defense Initiative (SDI) projects. As of March 1986 two foreign firm contracting actions were identified by SDIO, one of which was reported in SDIO's contract management information system. SDIO officials advised us that there are some foreign subcontractors but their data base tracks only prime contractors.

According to SDIO, consultations have been underway with various countries on their participation in the SDI program. As of May 1986, international agreements had been signed with three countries. SDIO officials stated that foreign firm procurements will be made in compliance with U.S. laws, regulations, and national policy. The officials stated that foreign firms will have to compete with U.S. firms for SDI contracts and subcontracts.

## STRATEGIC DEFENSE INITIATIVE INSTITUTE

On March 18, 1986, a notice was published in the Federal Register announcing DOD's intent to establish a federally funded research and development center, designated the Strategic Defense Initiative Institute, for the purpose of providing technical support for the SDI program. The organizational structure of the Institute has not been determined. A DOD official stated that an advisory group has been established that will propose the specific organizational structure for the Institute in the near future.

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We developed the information in this fact sheet from our review of documents, including the international agreements, at the Office of the Secretary of Defense, SDIO, and the other executing organizations within

the Army, Navy, Air Force, and Defense Advanced Research Projects Agency. We interviewed officials at these activities. We also obtained contract data printouts prepared by SDIO from its contract management information system. We did not verify the accuracy of the data.

We did not obtain official agency comments on this fact sheet, but we did discuss its contents with DOD officials and their views were considered in preparing this document.

We will send copies of this fact sheet to interested parties and make copies available to others on request. Should you need additional information or have any questions, please call me on 275-4268.

Harry R. Finley
Senior Associate Director

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## ABBREVIATIONS

| | |
|---|---|
| DARPA | Defense Advanced Research Projects Agency |
| DNA | Defense Nuclear Agency |
| DOD | Department of Defense |
| DOE | Department of Energy |
| DFAR | DOD Federal Acquisition Regulation |
| FFRDC | federally funded research and development center |
| GAO | General Accounting Office |
| IS&T | Innovative Science and Technology |
| SBIR | Small Business Innovation Research |
| SDI | Strategic Defense Initiative |
| SDIO | Strategic Defense Initiative Organization |

## STRATEGIC DEFENSE INITIATIVE PROGRAM

### BACKGROUND

In April 1984 the Secretary of Defense issued an interim charter to establish and define the Department of Defense (DOD) organization that would manage the Strategic Defense Initiative (SDI) program. The charter established the Strategic Defense Initiative Organization (SDIO). A Director, reporting directly to the Secretary of Defense, has overall management responsibility for the SDI program. In February 1986 DOD Directive 5141.5 established SDIO as a separate agency of DOD under the direction, authority, and control of the Secretary of Defense.

Although the Director, SDIO, has overall management responsibility, both the interim charter and directive provided for centralized planning and decentralized execution of the SDI program. Consequently, the military services, the Defense Nuclear Agency (DNA), and the Defense Advanced Research Projects Agency (DARPA) execute most of the SDI research and technology programs. Each of these executing organizations have designated an office that is primarily responsible for expediting the SDI work.

Figure I.1: DOD Executing Organizations Involved With SDI

| Executing organizations | Office of primary responsibility | Subordinate support organizations |
|---|---|---|
| Army | Strategic Defense Command | Ballistic Missile Defense Program Manager, Huntsville, Ala. |
| Navy | Office of Naval Research, Development, Test, and Evaluation | Navy commands, laboratories, and research centers |
| Air Force | Special assistant for SDI assigned both to Air Force Headquarters and Air Force Systems Command | Air Force Space Division, Los Angeles, Calif., and Electronic Systems Division, Boston, Mass. |
| DNA | Science and Technology Office | Radiation Directorate's Atmospheric Effects Division and the Shock Physics Directorate's Lethality Hardening Division |
| DARPA | Program Management Office | Technical program offices within DARPA |

The SDI research efforts are organized into five program elements and the budget requests are submitted to the Congress by these program elements. The fiscal years 1985 and 1986 appropriations are shown in table I.1. Amounts programmed and obligated by executing organizations as of December 1985 are shown in table I.2. Appropriations remain available for obligation for 2 years.

Table I.1: Fiscal Years 1985 and 1986 SDI Appropriations

| Program element | Fiscal year budget 1985 | 1986 |
|---|---|---|
| | ----(millions)---- | |
| Surveillance, Acquisition, Tracking and Kill Assessment | $ 546 | $ 857 |
| Directed Energy Weapons Technology | 378 | 844 |
| Kinetic Energy Weapons Technology | 256 | 596 |
| Systems Concepts/Battle Management | 100 | 227 |
| Survivability, Lethality, and Key Technologies | 108 | 222 |
| Total | 1,388 | 2,746 |
| Management of SDIO | 9 | 13 |
| Total | $1,397 | $2,759 |

Table I.2: Amounts Programmed and Obligated by DOD Executing Organizations as of December 1985

| Executing organization | FY 1985 budget Programmed | Obligated | FY 1986 budget Programmed | Obligated |
|---|---|---|---|---|
| | ----------(millions)---------- | | | |
| Army | $ 512 | $ 497 | $ 916 | $164 |
| Navy | 76 | 75 | 155 | 36 |
| Air Force | 345 | 337 | 934 | 144 |
| DARPA | 213 | 205 | 116 | 1 |
| DNA | 85 | 85 | 113 | 24 |
| SDIO | 166 | 141 | 525 | 68 |
| Total | $1,397 | $1,340 | $2,759 | $437 |

## CONTRACT REPORTING

In September 1985, SDIO implemented a contract management information system to provide essential contract data, beginning with the fiscal year 1985 SDI program. The system is also to assist SDIO in responding to ad hoc requests for contract information. The contract data for the system is provided monthly by each of the agencies executing the SDI program.

The system does not yet contain complete contract information and is undergoing refinement and update. The executing agencies have been informed of the need to provide complete contract information, including additional data on contracts already reported. SDIO officials expect that future data submissions will include all required contract information.

As of March 1986, about $998 million was reported as fiscal year 1985 funds obligated on 995 contracts, including initial, follow-on, or continuing contract awards for SDI program. These contracts involved industry, a foreign firm, educational institutions, Department of Energy's (DOE's) national laboratories, and other nonprofit organizations.

### Types of contractors

SDIO's information system assigns contract codes to types of contractors. Complete coding data was not available on 80 contracts with fiscal year 1985 obligations of $38.4 million. For the other 915 contracts, see table I.3 for the classification by type of contractor.

Table I.3: Fiscal Year 1985 Obligations by Type of Contractor as of March 1986

| Classification | Contracts | | Obligations | |
|---|---|---|---|---|
| | Number | Percent | Amount | Percent |
| | | | (millions) | |
| Large business performing in United States | 567 | | $719.6 | |
| Small business performing in United States | 192 | | 80.1 | |
| Total business in United States[a] | 759 | 83.0 | 799.7 | 83.4 |
| Educational institutions | 66 | 7.2 | 18.6 | 1.9 |
| DOE's national laboratories | 52 | 5.7 | 62.9 | 6.6 |
| Other nonprofit | 37 | 4.0 | 78.0 | 8.1 |
| Foreign firm | 1 | .1 | .1 | 0.0 |
| Total | 915 | 100.0 | $959.3 | 100.0 |

[a]From the data available, we were not able to determine whether any of these contractors are foreign owned.

## Extent of competition

SDIO's information system codes contract awards by the extent of competition. This coding is based on those categories prescribed by DOD for reporting its procurement statistics by competitive and noncompetitive contract awards. The DOD Federal Acquisition Regulation Supplement (DFAR subpart 4.6) prescribes the following five definitions for classifying contracts.

### Price competition

This classification is used for contracts when (1) offers are solicited and received from at least two responsible offerors capable of satisfying the government's requirements wholly or partially, and the award or awards were made to the offeror or offerors submitting the lowest evaluated price, or (2) offers are solicited from at least two responsible offerors who normally contend for contracts for the same or similar item, and only one offer is received.

### Design or technical competition

This classification is used for contracts when two or more qualified sources are invited to submit design or technical

proposals. The subsequent award is based primarily on design and technical factors, rather than on a price basis. Many research and development contracts are in this classification.

Follow-on after price or design/technical competition (noncompetitive)

This classification is used to identify a new acquisition placed with a particular contractor (whether placed by a new contract or by a supplemental agreement) which continues or augments a specific program. An example of a contract in this category is one which by force of circumstances was awarded to a contractor who was just completing a research and development contract in the same program.

Other noncompetitive

This classification is for contracting actions where no competition was present.

Catalog or market (noncompetitive)

This classification is used for a contracting action where there was no competition in the award and the reasonableness of price was based on established catalog or market prices of commercial items sold in substantial quantities to the general public.

Competitive and noncompetitive contract awards

The SDIO information system did not contain the extent of competition coding for 446 contracts with total fiscal year 1985 obligations of about $381 million.

Table I.4: Extent of Competition Coding

| Classification | Contracts | | Obligations | |
|---|---|---|---|---|
| | Number | Percent | Amount | Percent |
| | | | (millions) | |
| Contract awards indicating extent of competition | 549 | 55.2 | $616.5 | 61.8 |
| Contract awards not indicating extent of competition | 446 | 44.8 | 381.2 | 38.2 |
| Total | 995 | 100.0 | $997.7 | 100.0 |

Eighty-one contracts with total fiscal year 1985 obligations of about $20 million were not coded because they include awards to nonprofit organizations such as educational institutions, and awards pursuant to section 8(a) of the Small Business Act (15 U.S.C. 637(a)). In a March 1982 report,[1] we noted that DOD excluded these types of contracts from procurement competition classification because

--there is extremely limited expectation that awards for research, advance technology effort, and similar requirements to educational and nonprofit institutions can be on a competitive basis, and

--in regard to section 8(a) of the Small Business Act, there is no opportunity to compete the requirement in that the contract is awarded sole-source to the Small Business Administration which negotiates or awards subcontracts to disadvantaged small business firms.

Our report expressed the view that DOD's policy resulted in incomplete disclosure on the level of competition obtained. We suggested that when there is only one contractor available, these contracts could be included in procurement statistics by using the classification "Noncompetitive-No Potential." Contracts awarded under section 8(a) of the Small Business Act may have competitive potential, but because they are intended to assist disadvantaged businesses, they are not competed. We suggested that such contracts could be displayed under a category such as "Noncompetitive-Potential."

SDIO officials believe that these type of contracts should be excluded in accordance with DOD's policy. However, for the purposes of the current analysis, we have included these excluded contracts in table I.5 which shows the percentage of contracts that were competitively awarded.

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[1]Letter report to the Secretary of Defense (PLRD-82-45, Mar. 8, 1982).

Table I.5: Fiscal Year 1985 Obligations by Extent of Competition as of March 1986

| | Contracts | | Obligations | |
|---|---|---|---|---|
| | Number | Percent | Amount | Percent |
| | | | (millions) | |
| Competitive: | | | | |
| Price competition | 2 | | $ .6 | |
| Design or technical competition | 381 | | 420.9 | |
| Total | 383 | 60.8 | $421.5 | 66.2 |
| Noncompetitive: | | | | |
| Follow-on after price competition | 6 | | $ 19.9 | |
| Follow-on after design or technical competition | 31 | | 90.9 | |
| Other noncompetitive | 128 | | 84.1 | |
| Catalog or market | 1 | | .1 | |
| Noncompetitive--contracts excluded by DOD | 81 | | 20.2 | |
| Total | 247 | 39.2 | $215.2 | 33.8 |

Contracts not classified

For the other 365 contracts for which data had not been reported as to extent of competition, we were able to obtain some information from executing organizations on the competitive status of 157 contracts with fiscal year 1985 obligations of $145.8 million. This data showed that

--44 contracts with total fiscal year 1985 SDI program obligations of $16.6 million were competitive awards and

--113 contracts with total fiscal year 1985 SDI program obligations of $129.2 million were sole-source awards.

Table I.6 shows the change in the procurement statistics for the fiscal year 1985 SDI program by including the 157 contract awards.

Table I.6: Change in Procurement Statistics

| | Contracts | | Obligations | |
|---|---|---|---|---|
| | Number | Percent | Amount | Percent |
| | | | (millions) | |
| Competitive | 427 | 54.3 | $438.1 | 56.0 |
| Noncompetitive | 360 | 45.7 | 344.4 | 44.0 |

In our discussions with SDIO officials, they expressed concern over the possibility of assuming the above procurement statistics would be considered representative of the extent of competition on all contract awards. Their primary concern was that the other 208 contracts not included could significantly change the ratio of competitive and noncompetitive procurements. We agree that information on contracts not included in the data could change the ratio, but this is the best information readily available.

Design or technical competition classification

To determine whether contracts classified as design or technical competition were properly categorized on SDIO's March 1986 printout, we selected a random sample of 25 contracts from that classification at the Army Strategic Defense Command where we are examining detailed procurement procedures and practices. The command had 110 contracts, or 29 percent, of the total 381 contracts classified as design or technical competition on the printout. Total fiscal year 1985 SDI program obligations for these 110 contracts was about $217 million.

We researched the contract files to determine if the procurement actions for each contract selected met the criteria contained in procurement regulations on classifying the contract as design or technical competition. With one exception, all of the contracts were properly categorized. The one exception was a contract awarded sole source (noncompetitive) and an administrative error resulted in improperly coding the contract as a design or technical competition.

Reasons for noncompetitive procurements

To determine the reasons for the use of noncompetitive procurements, we selected a random sample of 25 contracts from the "other noncompetitive" classification on the SDIO March 1986 printout that were awarded by the Army Strategic Defense Command. The command had 58 contracts, or 45 percent, of the total of 128 contracts which were classified as other noncompetitive procurements on the printout. Total fiscal year

1985 SDI program obligations for the 58 contracts was about $31 million.

For each sampled contract, we researched the contract files to determine the specific circumstance cited to justify the noncompetitive procurement. Table I.7 presents the reasons that were indicated by the justification in the contract files.

Table I.7: Reasons for Noncompetitive Procurements

| Reason | Number of contracts |
|---|---|
| Only one source | 20 |
| Follow-on to previous contract | 3 |
| Unsolicited proposal | 2 |
| Total | 25 |

INNOVATIVE SCIENCE AND TECHNOLOGY OFFICE

The Innovative Science and Technology (IS&T) Office is one of six technical divisions within SDIO. Its goal is to seek out new and innovative approaches to ballistic missile defense, allocate funding to sponsor research in these approaches, and insure that the other technical divisions within SDIO are apprised of new results or breakthroughs. SDIO's innovative science and technology program was funded at $24 million for fiscal year 1985 and the current projected funding level for fiscal year 1986 is about $76 million.

The justification for this program is that:

--Available technologies will not supply answers to all of SDI's future needs and some "seed" funding is necessary to sponsor innovative and far-term concepts.

--It provides a mechanism by which the academic sector can be brought in on SDI research problems.

The IS&T Office is also responsible for administering the SDIO Small Business Innovation Research (SBIR) program. The SBIR program was established by Public Law 97-219, Small Business Innovation Development Act of 1982, and is designed to strengthen the role of small, innovative firms in federally funded research and development programs. It requires federal agencies with budgets of $100 million or more for research and development performed by parties outside the agencies to set aside specified percentages of this budget to fund an SBIR program. For fiscal years 1985 and 1986, SDIO's SBIR program funding is about $4 million and $20 million, respectively.

For the fiscal year 1986 SDI program, the IS&T Office was assigned an additional responsibility of carrying out SDIO's administrative and technical responsibilities for the medical application of free-electron lasers and associated material and physical science research program. This research program was specifically authorized by the fiscal year 1986 DOD Authorization Act (section 221, Public Law 99-145). The current fiscal year 1986 projected funding level is $15 million.

The IS&T Office's total program funding was $28 million for fiscal year 1985 and will increase to $111 million for fiscal year 1986.

SDIO's budget submission to the Congress does not contain a separate program element for the IS&T Office's program. The IS&T Office uses funds from each of the five program elements in SDIO's budget.

The IS&T Office centrally manages its research programs, including the SBIR program. Executing agencies implement the programs and provide the IS&T Office with the scientific and technical expertise needed to implement the program. The executing agencies are responsible for the day-to-day technical management of IS&T research programs, review of research proposals, and contracting. Table I.8 summarizes the fiscal year 1985 IS&T Office's program funds, including the SBIR program, allocated to these organizations.

Table I.8: Innovative Science and Technology Office Fiscal Year 1985 Program Funds

| Organization | Fiscal year 1985 funds (millions) |
|---|---|
| Army | $ 2.0 |
| Navy | 14.0 |
| Air Force | 1.6 |
| Defense Nuclear Agency | 8.4 |
| DOE's national laboratories | 1.8 |
| Total | $27.8 |

In addition, SDIO provided $200,000 in fiscal year 1985 funds for the IS&T Office's program studies and analyses that were awarded under an existing contract with the Institute for Defense Analysis. The Institute is a government-sponsored, independent, non-profit organization that was established at the request of DOD.

Contracts awarded

The IS&T Office obtained from its executing agencies and provided to us program information on its research projects and contract awards. As of February 1986, the program information showed that 94 contracts with total fiscal year 1985 funding of $19.3 million had been awarded for research projects.

An IS&T Office official stated that most of these contracts were awarded competitively. However, we were not able to ascertain the extent of competition on these awards from SDIO's contract management information system. Our comparison of these contracts with those reported in SDIO's information system showed that as of March 1986 only six contracts with total funding of about $2.8 million had been reported to SDIO. Three contracts with total funding of about $1.1 million were classified as design or technical competition awards. Three contracts with total funding of about $1.7 million were not classified as to extent of competition on the awards.

FOREIGN CONTRACTING

In discussions with SDIO and executing organizations, we were told that there has not been any significant contracting on SDI projects with foreign firms or governments.

SDIO officials stated that the United States has been involved in consultations with foreign countries on SDI to seek foreign participation in the program. As of May 1986, the United States has signed classified international agreements with Israel, the United Kingdom, and the Federal Republic of Germany. These agreements set forth the general guidelines, such as technology transfer, patent/property rights, and exchange of classified information, for participation by those countries' contractors. These agreements were signed in December 1985, and March and May 1986. SDIO officials stated that procurements from foreign firms will be made in compliance with U.S. laws, regulations, and national policy.

SDIO has provided some written guidelines to executing organizations and plans to provide additional guidance concerning the procurement procedures and practices for awarding contracts to foreign firms. We were advised that foreign and domestic firms will be competing on an equal basis for SDI contracts and subcontracts.

As of March 1986, SDIO's contract management information system identified one foreign firm contract award with total fiscal year 1985 SDI obligations of $148,000. This contract was identified as a competitive award resulting from a design or technical competition. As of March 1986, SDIO officials also

identified one other Air Force contract award to a foreign firm valued at $980,000. An Air Force official indicated that this contract was a competitive award following the Federal Acquisition Regulation system competitive procedures.

We were also advised by SDIO that there are some subcontracts with foreign firms. However, its contract management information system tracks only prime contractors and therefore data on subcontracts is not available.

STRATEGIC DEFENSE INITIATIVE INSTITUTE

On March 18, 1986, a notice was published in the Federal Register announcing DOD's intent to establish a federally funded research and development center (FFRDC) to support SDIO and to designate the center as the Strategic Defense Initiative Institute. The Institute is to provide SDIO with continuous technical support.

The Director, SDIO, requested that an assessment be made on the best way to obtain technical support to carry out its SDI responsibilities. An SDIO technical working group was established to assess all possible institutional forms for providing SDIO with this support.

According to a DOD official, the assessment was an evolutionary process in which a number of individuals participated. This group identified the criteria for this SDIO support capability and addressed various alternatives to meet the long-term needs. The organizational alternatives considered consisted of government organizations, industry, and nonprofit firms, including existing FFRDCs. The official stated that the evaluation concluded that a new FFRDC should be established because it would

--provide quick, responsive handling of SDIO technical needs while allowing greater flexibility in management and in attracting top scientific and engineering talent;

--provide the breadth and depth of scientific and engineering talent to undertake major SDI technology program review and oversight that does not currently exist at nonprofit organizations, including established FFRDCs; and

--prevent any conflict of interest in a for-profit or other existing organization.

The DOD official stated that in early January 1986 the assessment was presented orally to the Secretary of Defense and he approved the establishment of the new FFRDC.

The official stated that an advisory group has been established to propose the specific organizational structure of the FFRDC to the Secretary of Defense. This would include the number of personnel and extent of contract effort. The official stated that this group may submit its proposal to the Secretary during the summer.

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